



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

<i>In re</i> Application of	)	
	)	
Zack and Kagayama	)	Examiner: Gemeniano, Malou C.
	)	
Serial No. 10/617,885	)	Group Art Unit: 1632
	)	
Filed: July 14, 2003	)	Atty. Dkt. No. 01107.00368
For: NEURONAL GENE EXPRESSION PATTERNS		

**INFORMATION DISCLOSURE STATEMENT**

U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop Amendment  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

Please consider the documents listed on the attached Form PTO-1449. Copies of the listed documents are attached. Charge our Deposit Account No. 19-0733 if a fee is required.

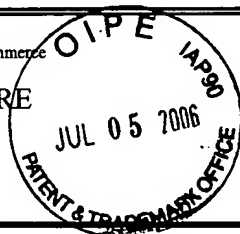
Respectfully submitted,  
BANNER & WITCOFF, LTD.

Date: July 5, 2006

By: *Lisa M. Hemmendinger*  
Lisa M. Hemmendinger  
Registration No. 42,653

Customer No. 22907

INFORMATION DISCLOSURE  
CITATION  
Sheet 1 of 5



Attorney Docket No.  
001107.00368

Serial No.  
10/617,885

Applicant: Zack

Filing Date: July 14, 2003

Group: 1632

U.S. PATENT DOCUMENTS

Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)

FOREIGN PATENT DOCUMENTS

Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation	
						YES	NO

OTHER DOCUMENTS

	Auricchio <i>et al.</i> , "Exchange of surface proteins impacts on viral vector cellular specificity and transduction characteristics: the retina as a model," <i>Human Molecular Genetics</i> 10, 3075-81, 2001
	Bankiewicz <i>et al.</i> , "Convection-enhanced delivery of AAV vector in parkinsonian monkeys; in vivo detection of gene expression and restoration of dopaminergic function using pro-drug approach," <i>Exp. Neurol.</i> 164, 2-14, July 2000 (abstract)
	Biewenga <i>et al.</i> , "Plasmid-mediated gene transfer in neurons using the biolistics technique," <i>J. Neurosci. Methods</i> 71, 67-75, January 1997 (abstract)
	Blesch <i>et al.</i> , "Modulation of neuronal survival and axonal growth in vivo by tetracycline-regulated neurotrophins expression," <i>Gene Therapy</i> 8, 954-60, June 2001 (abstract)
	Blesch & Tuszynski, "GDNF gene delivery to injured adult CNS motor neurons promotes axonal growth, expression of the trophic neuropeptide CGRP, and cellular protection," <i>J. Comp. Neurol.</i> 436, 399-410, August 2001 (abstract)
	Blits <i>et al.</i> , "Pharmacological, cell, and gene therapy strategies to promote spinal cord regeneration," <i>Cell Transplant.</i> 11, 593-613, 2002 (abstract)
	Boviatsis <i>et al.</i> , "Gene transfer into experimental brain tumors mediated by adenovirus, herpes simplex virus and retrovirus vectors," <i>Hum. Gene Ther.</i> 5, 183-91, February 1994 (abstract)
	Breakefield & DeLuca, "Herpes simplex virus for gene delivery to neurons," <i>New Biol.</i> 3, 203-18, March 1991 (abstract)
	Chen <i>et al.</i> , "HSV amplicon-mediated neurotrophin-3 expression protects murine spiral ganglion neurons from cisplatin-induced damage," <i>Mol. Ther.</i> 3, 958-63, June 2001 (abstract)
	Cheng <i>et al.</i> , "Human immunodeficiency virus type 2 (HIV-2) vector-mediated in vivo gene transfer into adult rabbit retina," <i>Curr. Eye Res.</i> 24, 196-201, March 2002 (abstract)
	Davar <i>et al.</i> , "Comparative efficacy of expression of genes delivered to mouse sensory neurons with herpes virus vectors," <i>J. Comp. Neurol.</i> 339, 3-11, January 1994 (abstract)
	de Marco <i>et al.</i> , "MR imaging of gene delivery to the central nervous system with an artificial vector," <i>Radiology</i> 208, 65-71, July 1998 (abstract)

EXAMINER

DATE CONSIDERED

INFORMATION DISCLOSURE  
CITATION  
Sheet 2 of 5Attorney Docket No.  
001107.00368Serial No.  
10/617,885

Applicant: ZACK

Filing Date: July 14, 2003

Group: 1649

## U.S. PATENT DOCUMENTS

Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation	
						YES	NO

## OTHER DOCUMENTS

	Di Polo <i>et al.</i> , "Prolonged delivery of brain-derived neurotrophic factor by adenovirus-infected Müller cells temporarily rescues injured retinal ganglion cells," <i>Proc. Natl. Acad. Sci. USA</i> 95, 3978-83, March 1998
	Eberhardt <i>et al.</i> , "Protection by synergistic effects of adenovirus-mediated X-chromosome-linked inhibitor of apoptosis and glial cell line-derived neurotrophic factor gene transfer in the 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine model of Parkinson's disease," <i>J Neurosci.</i> 2000 Dec 15;20(24):9126-34.
	Fathallah-Shaykh <i>et al.</i> , "Gene Transfer into Brain Parenchyma Elicits Antitumor Effects," <i>Cancer Res.</i> 60, 1797-99, April 1, 2000
	Garcia-Valenzuela <i>et al.</i> , "Axon-mediated gene transfer of retinal ganglion cells in vivo," <i>J. Neurobiol.</i> 32, 111-22, January 1997 (abstract)
	Giehl & Tetzlaff, "BDNF and NT-3, but not NGF, prevent axotomy-induced death of rat corticospinal neurons in vivo," <i>Eur. J. Neurosci.</i> 7, 1167-75, June 1996 (abstract)
	Haas <i>et al.</i> , "Single-cell electroporation for gene transfer in vivo," <i>Neuron</i> 29, 583-91, March 2001 (abstract)
	Hagihara <i>et al.</i> , "Widespread gene transfection into the central nervous system of primates," <i>Gene Ther.</i> 7, 759-63, May 2000 (abstract)
	Han <i>et al.</i> , "Transgene expression in the guinea pig cochlea mediated by a Lentivirus-derived gene transfer vector," <i>Hum. Gene Ther.</i> 10, 1867-73, July 20, 1999 (abstract)
	Hecker <i>et al.</i> , "Nonviral gene delivery to the lateral ventricles in rat brain: initial evidence for widespread distribution and expression in the central nervous system," <i>Mol. Ther.</i> 3, 375-84, March 2001 (abstract)
	Hoffman <i>et al.</i> , "NGF released from a polymer matrix prevents loss of ChAT expression in basal forebrain neurons following a fimbria-fornix lesion," <i>Exp. Neurol.</i> 110, 39-44, October 1990 (abstract)
	Hossain <i>et al.</i> , "Human FGF-1 gene delivery protects against quinolinate-induced striatal and hippocampal injury in neonatal rats," <i>Eur. J. Neurosci.</i> 10, 2490-99, August 1998 (abstract)
	Hughes <i>et al.</i> , "Axotomized septal cholinergic neurons rescued by nerve growth factor or neurotrophin-4/5 fail to express the inducible transcription factor c-Jun," <i>Neurosci.</i> 78, 1037-49, June 1997 (abstract)
	Isenmann <i>et al.</i> , "Short communication: protection of axotomized retinal ganglion cells by adenovirally delivered BDNF in vivo," <i>Eur. J. Neurosci.</i> 10, 2751-56, August 1998 (abstract)
	Johnston <i>et al.</i> , "Delivery of human fibroblast growth factor-1 gene to brain by modified rat brain endothelial cells," <i>J. Neurochem.</i> 67, 1643-52, October 1996 (abstract)
	Joung <i>et al.</i> , "Effective gene transfer into regenerating sciatic nerves by adenoviral vectors: potentials for gene therapy of peripheral nerve injury," <i>Mol. Cells.</i> 10, 540-45, October 2000 (abstract)

EXAMINER

DATE CONSIDERED

USPTO Form 1449      U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE</b> <b>CITATION</b> Sheet 3 of 5		Attorney Docket No. <b>001107.00368</b>		Serial No. <b>10/617, 885</b>	
		Applicant: <b>ZACK</b>			
		Filing Date: <b>July 14, 2003</b>			Group: <b>1649</b>

<b>U.S. PATENT DOCUMENTS</b>						
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)

<b>FOREIGN PATENT DOCUMENTS</b>						
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation
						<div style="display: flex; justify-content: space-around;"> <span>YES</span> <span>NO</span> </div>

<b>OTHER DOCUMENTS</b>	
	Kaspar <i>et al.</i> , "Targeted retrograde gene delivery for neuronal protection," <i>Mol. Ther.</i> 5, 50-56, January 2002 (abstract)
	Kawaja <i>et al.</i> , "Somatic gene transfer of nerve growth factor promotes the survival of axotomized septal neurons and the regeneration of their axons in adult rats," <i>J. Neurosci.</i> 12, 2849-64, July 1992 (abstract)
	Keir <i>et al.</i> , "Adeno-associated virus-mediated delivery of glial cell line-derived neurotrophic factor protects motor neuron-like cells from apoptosis," <i>J. Neurovirol.</i> 7, 437-46, October 2001 (abstract)
	Knight <i>et al.</i> , "Non-viral neuronal gene delivery mediated by the H <sub>C</sub> fragment of tetanus toxin," <i>Eur. J. Biochem.</i> 259, 762-69, 1999
	Knusel <i>et al.</i> , "Brain-derived neurotrophic factor administration protects basal forebrain cholinergic but not nigral dopaminergic neurons from degenerative changes after axotomy in the adult rat brain," <i>J. Neurosci.</i> 12, 4391-402, November 1992 (abstract)
	Koliatsos <i>et al.</i> , "Mouse Nerve Growth Factor Prevents Degeneration of Axotomized Basal Forebrain Cholinergic Neurons in the Monkey," <i>J. Neurosci.</i> 10, 3801-13, December 1990
	Kromer, "Nerve growth factor treatment after brain injury prevents neuronal death," <i>Science</i> 235, 214-16, January 1987 (abstract)
	Kugler <i>et al.</i> , "Transduction of axotomized retinal ganglion cells by adenoviral vector administration at the optic nerve stump: an in vivo model system for the inhibition of neuronal apoptotic cell death," <i>Gene Ther.</i> 6, 1759-67, October 1999 (abstract)
	Lachman & Efstathiou, "Utilization of the Herpes Simplex Virus Type 1 Latency-Associated Regulatory Region To Drive Stable Reporter Gene Expression in the Nervous System," <i>J. Virol.</i> 71, 3197-207, April 1997
	Lilley <i>et al.</i> , "Multiple Immediate-Early Gene-Deficient Herpes Simplex Virus Vectors Allowing Efficient Gene Delivery to Neurons in Culture and Widespread Gene Delivery to the Central Nervous System In Vivo," <i>J. Virol.</i> 75, 4343-56, May 2001
	Liu <i>et al.</i> , "Application of recombinant adenovirus for in vivo gene delivery to spinal cord," <i>Brain Res.</i> 768, 19-29, September 12, 1997 (abstract)

EXAMINER	DATE CONSIDERED
----------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

USPTO Form 1449 U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE</b> <b>CITATION</b> Sheet 4 of 5				Attorney Docket No. 001107.00368		Serial No. 10/617, 885	
				Applicant: ZACK			
				Filing Date: July 14, 2003		Group: 1649	
<b>U.S. PATENT DOCUMENTS</b>							
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)	
<b>FOREIGN PATENT DOCUMENTS</b>							
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation	
						YES	NO
<b>OTHER DOCUMENTS</b>							
	Lucidi-Phillipi <i>et al.</i> , "TrkA activation is sufficient to rescue axotomized cholinergic neurons," <i>Neuron</i> 16, 653-63, March 1996 (abstract)						
	Mandel <i>et al.</i> , "Nerve growth factor expressed in the medial septum following in vivo gene delivery using a recombinant adeno-associated viral vector protects cholinergic neurons from fimbria-fornix lesion-induced degeneration," <i>Exp. Neurol.</i> 155, 59-64, January 1999 (abstract)						
	Morse, "Brain-derived Neurotrophic Factor (BDNF) Prevents the Degeneration of Medial Septal Cholinergic Neurons following Fimbria Transection," <i>J. Neurosci.</i> 13, 4146-56, October 1993						
	Naldini <i>et al.</i> , "Efficient transfer, integration, and sustained long-term expression of the transgene in adult rat brains injected with a lentiviral vector," <i>Proc. Natl. Acad. Sci. USA</i> 93, 11382-88, October 1996 (presented at a conference held June 9-11, 1996)						
	Naldini <i>et al.</i> , "In vivo gene delivery and stable transduction of nondividing cells by a lentiviral vector," <i>Science</i> 272, 263-67, April 12, 1996 (abstract)						
	Ogueta <i>et al.</i> , "The Human cGMP-PDE $\beta$ -Subunit Promoter Region Directs Expression of the Gene to Mouse Photoreceptors," <i>Investigative Ophthalmology &amp; Visual Science</i> 41, 4059-63, December 2000						
	Palmer <i>et al.</i> , "Development and Optimization of Herpes Simplex Virus Vectors for Multiple Long-Term Gene Delivery to the Peripheral Nervous System," <i>J. Virol.</i> 74, 5604-18, June 2000						
	Pean <i>et al.</i> , "Intraseptal implantation of NGF-releasing microspheres promote the survival of axotomized cholinergic neurons," <i>Biomaterials</i> 21, 2097-101, October 2000 (abstract)						
	Perrelet <i>et al.</i> , "IAP family proteins delay motoneuron cell death in vivo," <i>Eur J Neurosci.</i> 2000 Jun;12(6):2059-67 (abstract)						
	Sarkis <i>et al.</i> , "Efficient transduction of neural cells <i>in vitro</i> and <i>in vivo</i> by a baculovirus-derived vector," <i>Proc. Natl. Acad. Sci. USA</i> 97, 14638-43, December 19, 2000						
	Schneider <i>et al.</i> , "Retargeting of adenoviral vectors to neurons using the Hc fragment of tetanus toxin," <i>Gene Ther.</i> 7, 1584-92, September 2000 (abstract)						
	Sinnayah <i>et al.</i> , "Selective Gene Transfer to Key Cardiovascular Regions of the Brain: Comparison of Two Viral Vector Systems," <i>Hypertension</i> 39, 603-08, 2002						
	Takei <i>et al.</i> , "Pituitary adenylate cyclase-activating polypeptide promotes the survival of basal forebrain cholinergic neurons in vitro and in vivo: comparison with effects of nerve growth factor," <i>Eur. J. Neurosci.</i> 12, 2273-80, July 2000 (abstract)						
<b>EXAMINER</b>					<b>DATE CONSIDERED</b>		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

USPTO Form 1449      U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE</b> <b>CITATION</b> Sheet 5 of 5		Attorney Docket No. 001107.00368		Serial No. 10/617,885	
		Applicant: ZACK			
		Filing Date: July 14, 2003			Group: 1649

U.S. PATENT DOCUMENTS						
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)

FOREIGN PATENT DOCUMENTS										
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation				
						<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">YES</th> <th style="width: 50%;">NO</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	YES	NO		
YES	NO									

OTHER DOCUMENTS			
	Taylor, "Cell vehicles for gene transfer to the brain," <i>Neuromuscul. Disord.</i> 7, 343-51, July 1997 (abstract)		
	Terashima <i>et al.</i> , "Retrograde and anterograde labeling of cerebellar afferent projection by the injection of recombinant adenoviral vectors into the mouse cerebellar cortex," <i>Anat. Embryol.</i> 196, 363-82, November 1997 (abstract)		
	Wilcox <i>et al.</i> , "Nerve growth factor prevents apoptotic cell death in injured central cholinergic neurons," <i>J. Comp. Neurol.</i> 359, 573-85, September 1995 (abstract)		
	Williams <i>et al.</i> , "Glial cell line-derived neurotrophic factor sustains axotomized basal forebrain cholinergic neurons in vivo: dose-response comparison to nerve growth factor and brain-derived neurotrophic factor," <i>J. Pharmacol. Exp. Therp.</i> 277, 1140-51, May 1996 (abstract)		
	Williams <i>et al.</i> , "Continuous infusion of nerve growth factor prevents basal forebrain neuronal death after fimbria fornix transection," <i>pnas</i> 83, 9231-35, December 1986		
	Wu <i>et al.</i> , "An AAV promoter-driven neuropeptide Y gene delivery system using Sendai virosomes for neurons and rat brain," <i>Gene Ther.</i> 3, 246-53, March 1996 (abstract)		
	Xu <i>et al.</i> , "Polyphosphoester microspheres for sustained release of biologically active nerve growth factor," <i>Biomaterials</i> 23, 3765-72, September 2002 (abstract)		
	Yasuno <i>et al.</i> , "Nerve growth factor applied onto the olfactory epithelium alleviates degenerative changes of the olfactory receptor neurons following axotomy," <i>Brain Res.</i> 887, 53-62, December 22, 2000 (abstract)		
	Zhang <i>et al.</i> , "Protective effects of adenoviral cardiotrophin-1 gene transfer on rubrospinal neurons after spinal cord injury in adult rats," <i>Neurotox Res.</i> 2003;5(7):539-48 (abstract)		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;">EXAMINER</td> <td style="width: 40%; padding: 5px;">DATE CONSIDERED</td> </tr> </table>		EXAMINER	DATE CONSIDERED
EXAMINER	DATE CONSIDERED		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.